

REMARKS

Claims 27 to 31 have been amended. Claims 27 to 32 remain active in this application.

Claims 27 to 32 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 31 has been amended so that lines 9-11 now include both regions 205 and 206. The claim is readable on the disclosure as set forth at page 12, line 13ff.

Claims 27 to 32 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The amendment to claim 31 overcome this rejection.

Claims 27, 28, 30 and 31 were rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. (U.S. 6,709,901). The rejection is respectfully traversed both as previously presented and as amended to overcome the rejections under section 112.

Claim 31 requires, among other features, providing an added conductive region on the metallization pattern covering and conformal to each of the contact pads, the sidewalls of the windows and a portion of the protective overcoat surrounding the windows, the added conductive region having a planar outer surface, the outer surface of the added conductive region suitable to form metallurgical bonds without melting. No such feature is taught or suggested by Yamazaki et al. either alone or in the combination as claimed.

With reference to Fig. 10(B) of Yamazaki et al., the figure referred to in the rejection, it is clear that the structure does not meet the requirements of the method as claimed. The region 230 does not meet the requirements of claim 31 as set forth in the

above paragraph since it is clearly not conformal to each of the contact pads, the sidewalls of the windows and a portion of the protective overcoat surrounding the windows, the added conductive region having a planar outer surface, the outer surface of the added conductive region suitable to form metallurgical bonds without melting.

Claim 31 further requires providing an assembly board having a plurality of planar, metallurgically bondable terminal pads in a distribution aligned with the distribution of the contact pads, aligning the added metallization and the board pads so that each of the contact pads is connected to a corresponding board terminal pad and metallurgically bonding the chip metallization and the board pads without melting the outer surface of the added conductive layer. No such features are taught or suggested by Yamazaki et al. either alone or in the combination as claimed.

By the above claimed procedure, the board terminal pad is connected directly to the bond pad, thereby eliminating the required conductive particle 227 or barrier layer 229 of Yamazaki et al.

Claims 27, 28 and 30 depend from claim 31 and therefore define patentably over Homma et al. for at least the reasons stated above with reference to claim 31.

In addition, claim 27 further limits claim 31 by requiring that the step of depositing be selected from a group consisting of sputtering, evaporating, and plating. No such combination is taught or suggested by Yamazaki et al.


Claim 28 further limits claim 31 by requiring that the step of fabricating a planar outer surface of the added conductive layer comprise the step of depositing the at least one added conductive layer by electroless plating. No such combination is taught or suggested by Yamazaki et al.

Claim 30 further limits claim 31 by requiring that the step of fabricating a planar outer surface of the added conductive layer comprise the step of depositing the at least one added conductive layer by using the method of support by islands of protective overcoat. No such combination is taught or suggested by Yamazaki et al.

Claim 29 was rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. in view of Akram et al. (U.S. 6,617,687). The rejection is respectfully traversed.

Claim 29 depends from claim 31 and therefore defines patentably over the applied references for at least the reasons presented above with reference to claim 31 since Akram et al. fails to overcome the deficiencies of Yamazaki et al. as discussed above.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

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